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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventors: Eiko SEIDEL, et al.

Art Unit 2133

Appln. No.: 10/567,825

Conf. No. 2113

Filed: February 10, 2006

For: TIME MONITORING OF PACKET RETRANSMISSIONS DURING
SOFT HANDOVER

RENEWED PETITION TO MAKE SPECIAL

Assistant Commissioner of Patents
Washington, DC 20231

Sir:

The Applicants respectfully petition that the above-captioned application be granted special status. This Renewed Petition to Make Special supplements the discussion in the main Petition to Make Special filed June 21, 2006.

The Dismissal (copy attached), dated March 21, 2007, of the Petition to Make Special filed June 21, 2006, is on the grounds that "the eight "3GPP" references cited by the Petitioner as deemed most closely related to the subject matter encompassed by the claims do not have an associated detailed discussion of those references."

During a telephone discussion, the special programs examiner amplified that the Dismissal is on the grounds that these eight

documents were not fully discussed, in the Petition filed June 21, 2006, with the particularity required by 37 C.F.R. §1.111(b).

Supplemental Discussion of the 3GPP Documents

The Applicants respectfully note that the eight 3GPP documents were discussed in the present specification merely as Technical Background documents of the present invention, and the Applicants confirm that they are considered as having no relevance to the present claimed invention beyond that already stated in the Petition to Make Special and the specification.

The undersigned notes further that, because these eight 3GPP documents were cited in the specification (although only as Technical Background), they were cited in an Information Disclosure Statement (IDS); and because they were cited as IDS documents, they were discussed in the Petition to Make Special.

The undersigned notes further that the Applicants believe that the prior art most closely related to the pending claims is the art discussed at page 4, line 12 through page 8, line 2, and page 8, line 13 through page 9, line 22 of the Petition filed June 21, 2007 and at page 7, line 1 through page 13, line 11 and page 13, line 14 through page 14, line 16, and page 10, line 14 of the present Renewed Petition.

During telephone discussions with the undersigned a few days prior to issuance of the Decision of March 21, 2007, the undersigned discussed the above points with the Special Programs Examiner; the Special Programs Examiner indicated that if these statements were made in a renewed or supplemental petition, this would overcome the perceived deficiencies of the original petition. The Special Programs Examiner confirmed this to the undersigned in a communication on May 7, 2006.

Accordingly, grant of special status in accordance with this Renewed Petition to Make Special is respectfully solicited.

Reiteration of Substance of Petition Filed June 21, 2006 with Discussion of References submitted in Information Disclosure Statement of December 19, 2006

For completeness of this Renewed Petition, the following includes a reiteration of the Petition filed June 21, 2006.

Also, references cited in an Information Disclosure Statement filed December 19, 2006 are also discussed herein for the sake of completeness.

The Applicants respectfully petition that the above-captioned application be granted special status. The requirements of MPEP section 708.02(VIII) are complied with as follows:

(1) Please charge the petition fee set forth in 37 CFR 1.17(i) to Deposit Account No. 19-4375.

(2) All pending claims (new claims 40-80 presented in a Preliminary Amendment filed June 21, 2006) of the present application are believed to be directed to a single invention; if the Office determines that all the claims presented are not obviously directed to a single invention, the Applicants agree to make an election without traverse as a prerequisite to the grant of special status.

(3) A pre-examination search has been made, and an Information Disclosure Statement directed thereto was filed on June 21, 2006. The field of search is:

Class 370, subclasses 230, 231 and 235/331,349,394;

Class 455, subclasses 436, 439, 442, 443; and

Class 714, subclasses 746, 748, 749, 758, 750, 751 and 752.

Examiners Albert DeCady, Tilahun Gesesse, Jean Gelin and Ahmad Matar were consulted for the field of search.

In addition, a European Search Report and an International Search Report were issued in counterpart applications, and an Information Disclosure Statement directed to the art cited therein was filed on February 10, 2006. An office action in a counterpart Japanese application issued on October 24, 2006; an Information Disclosure Statement directed to the art cited therein was filed on December 19, 2006.

(4) One copy each of the prior art deemed most closely related to the subject matter encompassed by the claims is of record in the form of the art cited in the Information Disclosure Statements filed February 8, 2006, June 21, 2006 and December 19, 2006.

(5) The following provides a detailed discussion of the art of record (supplemented by the above comments on page 2, line 4 through page 3, line 8 of this Renewed Petition), and sets forth comments pointing out how the instant claimed subject matter is patentably distinguishable over the references of record, considered alone or in combination.

A. Discussion of All References of Record

3GPP TR 25.401, "UTRAN Overall Description," discussed at page 2, line 30 *et seq.* of the present application, discloses in Fig. 1 the high level R99/4/5 architecture of Universal Mobile Telecommunication System (UMTS).

The documents 3GPP TSG RAN WG3, "Feasibility Study on the Evolution of the UTRAN Architecture," 3GPP TSG RAN WG3, meeting #36, "Proposed Architecture on UTRAN Evolution," Tdoc R3-030678, and 3GPP TSG RAN WG3, meeting #36, "Further Clarifications on the Presented Evolved Architecture," Tdoc R3-030688, discussed at page 3, line 20 *et seq.* of the present application, provide a

feasibility study for UTRAN architecture evolution from the current R99/4/5 UMTS architecture.

3GPP TR 25.896, "Feasibility Study for Enhanced Uplink for UTRA FDD (Release 6)", discussed at page 5, line 6 et seq of the present application, discloses uplink enhancements for Dedicated Transport Channels (DTCH).

3GPP TSG RAN WG1, meeting#31, "HARQ Structure," Tdoc R1-030247, discussed at page 6, line 8 et seq. of the present application, in Fig. 5, shows the exemplary overall E-DCH MAC architecture on the user equipment side, with a new MAC functional entity (see Fig. 6) added to the MAC architecture of R99/4/5.

3GPP TS 25.133, "Requirements for Support of Radio Resource Management (FDD)", discussed at page 8, line 24 et seq. of the present application, describes reporting of pilot signal measurements to the network from the user equipment via RRC signaling, with filtering to average the fast fading, leading to handover delay.

3GPP TS 25.331, "Radio Resource Control (RRC) Protocol Specification", discussed at page 10, line 184 et seq. of the present application, states that before starting of any transmission, the radio bearer may be established and all layers should be configured accordingly.

WO 02 37872 to Ghosh et al. (cited under Category X in the European Search Report) discloses a soft-handover, hybrid ARQ scheme. In this scheme, after receiving a frame from a mobile station, plural base stations process the frame and communicate to the mobile station over a forward control channel either an ACK signal or a NACK signal indicating whether the frame contained any errors. The scheme deals with the following cases. First, if all base stations communicate that the frame contains errors, the mobile station retransmits the same frame to all base stations with a flush bit set to instruct the base stations to combine the retransmitted frame with the original frame; the retransmission of the unsuccessful frame and combining of the unsuccessful frames will continue until at least one of the base stations decodes a frame successfully or until a preset timeout period is reached (see page 9, lines 8-13). Secondly, if only some base stations communicate that the frame contains errors, the mobile station sets the flush bit to instruct the base stations not to combine the stored frame with the next frame and to clear the stored frame from memory (see page 9, lines 19-21 and page 10, lines 10-15). Thirdly, if all base stations communicate that the frame contains no errors, the mobile station sets the flush bit to instruct the base stations not to combine the stored frame with the next frame

and to clear the stored frame from memory (see page 8, lines 15-26) .

US 2002/019965 (issued as USPN 6,557,134 on April 29, 2003) to Bims et al. (cited under Category A in the European Search Report) discloses forward and reverse channel ARQ communication in which a forward channel ARQ session between a first unit and a second unit is performed. A command is sent to the second unit to start a forward channel ARQ session. This command includes a message length field specifying the length of an ARQ message to be sent by the first unit to the second unit. The second unit may refuse the command because of the length of the ARQ message, if, for example, available space in a memory of the second unit is not large enough to store the ARQ message. The first unit may resend the command within a predetermined time limit in response to receiving a request for the first unit to resend the command, or the second unit may unilaterally terminate the ARQ session if the first unit does not resend the command within the predetermined time limit.

US 2004/0116143 discloses a communication system which allows time and signal-to-noise ratio-based HARQ flush functions at base stations during soft handover. In this system, a base station flushes an ARQ buffer upon expiration of a timer that measures an expiration of a predetermined period of time after receiving a first transmission of a sub-frame in error, or the base station may

flush the ARQ buffer when the base station determines that the buffer has been corrupted due to received data with unacceptably low received SNR.

USPN 6850769 states in its Summary section: "The processor starts an abort timer associated with a transmitted negative acknowledgment for measuring an elapsed time from the time when the request for the re-transmission is sent. The abort timer determines whether the elapsed time of the abort timer exceeds an abort period of time dynamic threshold, and passes, to a protocol layer above the RLP, the received in-sequence RLP packets of data without waiting for receiving the retransmission of the missing RLP packets of data when the abort timer exceeds the abort period of time dynamic threshold. The processor is configured for determining the abort timer dynamic threshold based on statistical data obtained from measuring the periods of time between the time that the request for re-transmission is sent and the time that the requested re-transmission is received. The processor is configured for recording and accumulating data associated with a period of time for completing each successful retransmission of RLP packets for a number of retransmission processes and determining the statistical data based on the accumulated data of the period of times." Thus, this patent discloses a communication system which (1) starts an abort timer associated with a transmitted NACK for

measuring an elapsed time of the abort timer from the time when the request for a re-transmission is sent, and (2) determines whether the elapsed time of the abort timer exceeds an abort period of a time dynamic threshold that is based on statistical data of periods of time measured for previously received successful retransmissions of packet data. The abort period is adaptively computed in accordance with a protocol by specifying a first abort period during which retransmission of a frame must occur, measuring a retransmission period for successful retransmission of a frame each time a frame is retransmitted, using the retransmission period to compute a running mean and a mean deviation for recent retransmission periods, and setting a second RLP abort period based on the running mean and the mean deviation.

US 2002/172217 (JP 2002/369261) is cited in a Japanese office action dated October 24, 2006. The Japanese office action states that this reference (see Figs. 6-11) and WO '872 discussed above (see Figs. 1 and 2) disclose a HARQ operation during soft handover wherein a buffer of a base station is erased upon successfully decoding a received signal or upon receiving a signal for erasing a buffer (F bit, R-EPFICH, and R-HCCH). Paragraph [0069] of US 2002/172217 states that "The wireless unit 150 deems the transmission successful if either base station 152 or 154 ACKs. In the next transmission, the wireless unit 150 sends the R-EPFICH and

the R-HCCH to flush out the buffer of the base station that was unsuccessful in decoding the previous transmission." US 2002/172217 and WO '872 do not teach or suggest, alone or together, the subject matter of the present claims wherein a base station is operable to use a time elapsed since storing received data in a soft buffer in order to flush the soft buffer.

WO 03/017691 is cited in a Japanese office action dated October 24, 2006. The Japanese office action states that this reference discloses that (see Fig. 12 and the related specification discussion) when a timer expires without receipt of a frame or an "erasure" (defined as a received message that the receiver cannot process), a receiver identifies the end of segment as the last received "erasure" and stores information from the frame in a buffer and resets the timer. The Japanese office action states that this reference suggests erasing buffer data when the time passed on a timer goes over a threshold after storage in a buffer.

However, in WO 03/017691 a timer is reset when an event occurs such as receipt of a message that the receiver cannot process. More particularly, WO 03/017691 is directed to building segments of a message from a plurality of transmitted frames, identifying a missing segment of the message; and requesting a retransmission of the missing segment. Paragraph [1080] states that if a frame is received at 704 in Fig. 12, the information from the frame is

stored in a memory storage buffer at 718. The receiver updates an average inter-arrival time of segments referred to as AIT at 720. At 722 the receiver resets a timer I. At 724, if the frame was the end of a segment, processing continues to 726 to check for errors. If no segment errors are found, the segment is processed as part of the message at 730. If an error is found, the receiver requests a retransmission at 728. If the frame was not the end of a segment at 724, the index value I is incremented at 716 and processing continues to 704 to wait for a next frame. If no frame is received at 704, the receiver checks for an "erasure" at 706. An erasure is defined as a message received that the receiver cannot process, such as due to a transmission error. If an erasure is received, the timer I is reset and a second timer I+1 is started. Processing then continues to step 716 to increment the index. If no erasure is found at 706, the receiver checks for errors at 712. If the timer I has not expired at 712, processing returns to 704 to wait for a next frame. If the timer has expired, the ordering of segments reflects the cumulative erasures. Paragraphs [1081] through [1083] state that when a message is received that the receiver cannot process (an "erasure"), such as due to a transmission error, a timer I is reset and a second timer I+1 is started. Fig. 13B shows an example of the technique wherein an erasure is received at time t3, and a first timer is started in response. A second erasure

is received at time t_4 prior to expiration of the first timer. The first timer is reset, and a second timer is started at time t_4 , wherein the timer period for expiration of the second timer is a function of the first timer value. When any timer expires, the receiver is able to identify the last received erasure as an end of segment. Calculation of the number of erasures allows the receiver to calculate the number of frames per segment. The Applicants submit that WO 03/017691 nowhere teaches or suggests the subject matter of the present claims wherein a base station is operable to use a time elapsed since storing received data in a soft buffer in order to flush the soft buffer.

B. Discussion of How the Claimed Invention Patentably Distinguishes over the References of Record

The references discussed above, considered either alone or in combination, fail to disclose or suggest at least the claimed subject matter of independent claims 40 and 72 which recite that, during a soft handover, one or more base stations receive data from a communications terminal, and the one or more base stations store the data in a soft buffer and decode the data. The one or more base stations is/are operable to use a time elapsed since storing the received data in the soft buffer in order to flush the soft buffer. In contrast to the above-discussed claimed subject

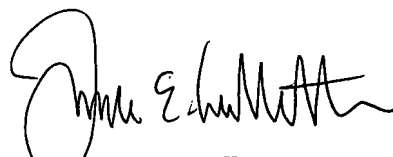
matter, it is noted that, for example, in US 2004/0116143, the timer measures an expiration of a predetermined period of time after receiving a first transmission of a sub-frame in error, and in USPN 6850769, the abort timer measures an elapsed time from the time when a request for a re-transmission is sent. In US 2002/172217, the buffer is flushed by sending an explicit signaling. In WO 03/017691, when a timer expires, a receiver identifies the last received erasure as an end of segment. In WO 03/017691, a timer is started when the receiver detects an erasure. Accordingly, none of these references teaches that the time elapsed since storing data in buffer is used for flushing the buffer. None of the other references of record discloses or suggests one or more base stations operable to use a time elapsed since storing the received data in the soft buffer in order to flush the soft buffer and thus do not cure the deficiencies of US 2004/0116143, USPN 6850769, US 2002/172217, and WO 03/017691.

Accordingly, in light of the foregoing discussion pointing out how the claimed invention distinguishes over the cited references, the Applicants respectfully submit that the inventions of all the presently pending claims are not anticipated by these references and would not have been obvious over any combination of the teachings thereof.

Grant of special status in accordance with this petition is respectfully requested.

No government fee is deemed to be due for this Renewed Petition to Make Special, but if an official fee is considered to be required, the Office is authorized to charge such fee to deposit account no. 19-4375.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'James E. Ledbetter', with a stylized, cursive script.

James E. Ledbetter
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Date: May 11, 2007

JEL/att

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Technology Center 2100

In re Application of:

Seidel et al.

Application No. 10/567,825

Filed: September 18, 2006

For: **TIME MONITORING OF PACKET
RETRANSMISSIONS DURING SOFT
HANDOVER**

DECISION ON PETITION TO
MAKE SPECIAL

This is a decision on the petition, filed June 21, 2006 under M.P.E.P. § 708.02(VIII): Accelerated Examination, to make the above-identified application special.

M.P.E.P. § 708.02, Section VIII which sets out the prerequisites for a grantable petition for Accelerated Examination under 37 C.F.R. § 102(d) states in relevant part:

A new application (one which has not received any examination by the examiner) may be granted special status provided that applicant (and this term includes applicant's attorney or agent) complies with each of the following items:

- (A) Submits a petition to make special accompanied by the fee set forth in 37 CFR 1.17(i);
- (B) Presents all claims directed to a single invention, or if the Office determines that all the claims presented are not obviously directed to a single invention, will make an election without traverse as a prerequisite to the grant of special status;
- (C) Submits a statement(s) that a pre-examination search was made, listing the field of search by class and subclass, publication, Chemical Abstracts, foreign patents, etc. A search made by a foreign patent office satisfies this requirement;
- (D) Submits one copy each of the references deemed most closely related to the subject matter encompassed by the claims if said references are not already of record; and
- (E) Submits a detailed discussion of the references, which discussion points out, with the particularity required by 37 CFR 1.111 (b) and (c), how the claimed subject matter is patentable over the references.

In those instances where the request for this special status does not meet all the prerequisites set forth above, applicant will be notified and the defects in the request will be stated. The application will remain in the status of a new application awaiting action in its regular turn. In those instances where a request is

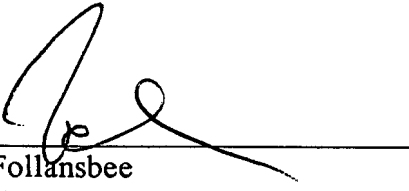
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defective in one or more respects, applicant will be given one opportunity to perfect the request in a renewed petition to make special. If perfected, the request will then be granted. If not perfected in the first renewed petition, any additional renewed petitions to make special may or may not be considered at the discretion of the Group Special Program Examiner.

Applicant's submission is deficient in that it does not comply with item (E) above. The eight "3GPP" references cited by the Petitioner as deemed most closely related to the subject matter encompassed by the claims do not have an associated detailed discussion of those references.

Accordingly, the Petition is **DISMISSED**. The application file is being forwarded to Central Files to await examination in its proper turn based on its effective filing date.

Any request for reconsideration must be filed within two months of the mailing date of this decision.



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